

**REMARKS**

This is responsive to the Office Action issued on March 24, 2003. By this response claims 1, 4 and 14 are amended, and claims 2, 5 and 15 are rewritten in independent form. No new matter is added. Claims 1-17 are now active for examination.

The Office Action dated March 24, 2003 allowed claims 11-13, and rejected claim 1 is rejected under 35 U.S.C. §102(b) as being anticipated by Goldenberg et al. (WO 94/15401), and claims 4 and 14 under 35 U.S.C. §103(a) as being unpatentable over Goldenberg et al. in view of Taniguchi et al. (U.S. Patent No. 6,225,843). Claims 2, 3, 5-10 and 15-17 were objected to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all of the limitations of the based claim and any intervening claims. The Examiner also asserted that a Taiwanese patent publication No. 387,065 cited in an IDS submitted on January 6, 2003 was not considered because a copy of the reference was not attached to the IDS.

The rejections and objection are respectfully traversed in view of the amendment and remarks presented herein.

**TAIWANESE PUBLICATION NO. 387,065 WAS SUBMITTED PREVIOUSLY**

The office action asserted that a reference (Taiwanese patent publication No. 387,065) cited in an IDS submitted on January 6, 2003 was not considered because a copy of the reference was not attached to the IDS. It is respectfully submitted that a copy of the reference was already submitted by an IDS dated November 13, 2002. The IDS filed on January 6, 2003 merely corrected the citation of the reference. Therefore, no additional

copy of the reference is needed for the January 6, 2003 IDS filing. For convenience of Examiner's review, a copy of Taiwanese patent publication No. 387,065 is attached hereto.

**THE OBJECTION OF CLAIMS 2, 3, 5-10 AND 15-17 IS ADDRESSED**

Claims 2, 3, 5-10 and 15-17 were objected to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all of the limitations of the based claim and any intervening claims. Claims 2, 5, and 15 directly depend on claims 1, 4 and 14, respectively. By this Amendment, claims 2, 5 and 15 are rewritten in independent form including all of the limitations of the based claim on which they depend. Therefore, claims 2, 5 and 15 are now patentable.

Claims 3, 6-10, 16 and 17, directly or indirectly, depend on claims 2, 5 and 15, respectively, and include every limitation thereof. Since claims 2, 5 and 15 are patentable, claims 3, 6-10, 16 and 17 are also patentable based on the same reasons for claims 2, 5 and 15 as well as on their own merits. Favorable reconsideration of claims 2, 3, 5-10 and 15-17 is respectfully requested.

**THE ANTICIPATION REJECTION OF CLAIM 1 IS TRAVERSED**

Claim 1 was rejected as being anticipated by Goldenberg. The rejection is respectfully traversed because Goldenberg cannot support a prima facie case of anticipation.

Claim 1, as amended, recites:

A delay locked loop comprising:  
a delay circuit for delaying a first clock to output a second clock;  
a detector for detecting which of said first and second clocks is advanced in a phase; and

a gray code counter using a gray code, responsive to an output of said detector, for selectively generating one of a signal to increase an amount of delay of said delay circuit and a signal to decrease said amount of delay of said delay circuit;

wherein said detector outputs a result of phase comparison between said first and second clocks after each said phase comparison, and said output of said detector indicates that said first clock is in advance of said second clock in a phase or said second clock is in advance of said first clock in a phase." (emphasis added)

The amendment clarifies that the detector generates a phase comparison result after each phase comparison such that an adjustment on an amount of delay is performed every time the detector compares the phases of the clocks. Adequate support for the amendment can be found in, for example, Figs. 9 and 14, and related descriptions in the specification.

The operation of Goldenberg is different from that of the delayed lock loop described in claim 1. According to Goldenberg, detector 56 derives a pulse on output lead 60 only when there is a change in the phase lead-phase lag relationship of the two inputs of detector 56. See page 20, line 27 through page 21, line 2. The gray code counter monotonously increases or decreases an amount of delay progressively until a new pulse 60 is received. The amount of delay remains unchanged until a new pulse 60 is generated. Thus, in Goldenberg, an amount of delay remains fixed until the phase leading-phase lagging relationship is inverted. Goldenberg does not adjust the amount of delay every time a comparison is made between two clock signal inputs of the detector 56. Therefore, Goldenberg fails to teach that "said detector outputs a result of phase comparison between said first and second clocks after each said phase comparison," and "a gray code counter..., responsive to an output of said detector, for selectively generating one of a

signal to increase an amount of delay of said delay circuit and a signal to decrease said amount of delay of said delay circuit," as required by claim 1.

Since Goldenberg fails to teach every limitation of claim 1, Goldenberg cannot support a prima facie case of anticipation. The anticipation rejection is thus untenable and should be withdrawn. Favorable reconsideration of claim 1 is respectfully requested.

#### **THE OBVIOUSNESS REJECTION OF CLAIMS 4 AND 14 IS TRAVERSED**

Claims 4 and 14 were rejected as being unpatentable over Goldenberg in view of Taniguchi. The rejection is respectfully traversed because the references, even combined, cannot support a prima facie case of obviousness.

Similar to claim 1, claim 4 recites "a gray code counter..., responsive to an output of said detector, for selectively generating one of a signal to increase an amount of delay of said delay circuit and a signal to decrease said amount of delay of said delay circuit; wherein said detector outputs a result of phase comparison between said first and second clocks after each said phase comparison." As discussed earlier, Goldenberg does not teach these features. Taniguchi was relied on by the Examiner for disclosing a delay locked loop circuit using an input buffer for receiving an external clock. Taniguchi, however, does not alleviate the deficiency of Goldenberg. Thus, Goldenberg and Taniguchi, even combined, do not teach every limitation of claim 4. Therefore, claim 4 is patentable. Favorable reconsideration of claim 4 is respectfully requested.

Claim 14, as amended, recites "A control method for a system operating in synchronization with a clock, comprising the steps of:...using a gray code, responsive to a result obtained in the step of detecting, to selectively generate one of a signal to

increase an amount of delay to be applied in the step of delaying and a signal to decrease said amount of delay to be applied in the step of delaying; wherein said result of detecting is generated after each phase comparison between said first and second clocks, and indicates that said first clock is in advance of said second clock in a phase or said second clock is in advance of said first clock in a phase." Thus, according to a method of claim 14, a result of phase detection is generated after each phase comparison made between the first and second clocks. In response to each result, a gray code is used to either decrease or increase an amount of delay.

As discussed earlier relative to claim 1, the gray code counter in Goldenberg does not adjust a delay amount in response to every comparison of clock phases. Thus, Goldenberg does not teach "using a gray code, responsive to a result obtained in the step of detecting, to selectively generate one of a signal to increase an amount of delay to be applied in the step of delaying and a signal to decrease said amount of delay to be applied in the step of delaying; wherein said result of detecting is generated after each phase comparison between said first and second clocks, and indicates that said first clock is in advance of said second clock in a phase or said second clock is in advance of said first clock in a phase," as required by claim 14. Taniguchi, too, fails to teach these features. Therefore, Goldenberg and Taniguchi, even combined, do not teach every limitation of claim 14. Accordingly, claim 14 is patentable. Favorable reconsideration of claim 14 is respectfully requested.

## **CONCLUSION**

Therefore, the present application claims subject matter patentable over the references of record and is in condition for allowance. Favorable consideration is

09/877,027

respectfully requested. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY

A handwritten signature in black ink that reads "Wei-Chen Chen" with a small flourish at the end.

Wei-Chen Chen

Recognition under 37 CFR §10.9(b)

600 13<sup>th</sup> Street, N.W.  
Washington, DC 20005-3096  
(202) 756-8000 WC:apr  
Facsimile: (202) 756-8087  
**Date: June 19, 2003**